

Upgrade grade (Again)

Write a program that input a list of student ID and grade, follow by a list of student ID that receive grade upgrade by one level (From **B+** to **A**, from **B** to **B+** from **C+** to **B**,.....)

Input


Consist of 2 parts

- First part has multiple line as a list of student ID and grade, one line per student, this part end on the line with **q** letter
- Second part has one line as a list of student ID (separate by space) that receive upgrade by one level

Output

A list of student ID and grade (After upgrade) of every students, one line per student, **in student ID ascending numerical order (from the smallest to the largest number)**

Example

Input (from keyboard)	Output (on screen)
44444 A 22222 F 11111 B+ 66666 C 55555 B 33333 D+ q 33333 22222 55555	11111 B+ 22222 D 33333 C 44444 A 55555 B+ 66666 C  Arrange by student ID from the smallest to the largest number